

Having thus described the invention what is claimed and desired to be secured by Letters Patent is:

- Sub 1. A tamper resistant body-worn tracking device for use in a wireless communication system receiving signals from a GPS and directly communicating spacial coordinates to multiple remote sites, the body-worn tracking device comprising
- (a) a sealed enclosed case containing means for implementing tamper detection;
 - (b) a main battery enclosed by the case;
 - (c) a signaling device enclosed by the case;
 - (d) a means to replace the main battery;
 - (e) a circuit board enclosed by the case having attached on the circuit board, a wireless data modem, a GPS receiver, a matched filtering GPS receiver, and a field programmable gate array.
2. A body-worn tracking device according to claim 1 in contact with a central station computer containing an algorithm for comparing the current location of the body-worn tracking device to a schedule of rules and location restraints to determine if a static violation has occurred.
3. A body-worn tracking device according to claim 1 containing a battery monitoring circuit.
4. A body-worn tracking device according to claim 1 wherein the means for implementing tamper detection are battery cover screws that actuate an alarm to a central data base if removed from contact with the case.

Sub 5. A body-worn tracking device according to claim 1 wherein the means for implementing tamper detection is a strap attached to the case which if severed actuates an alarm to a central data base.

5/6. A body-worn tracking device according to claim 1 wherein the signaling device is a low profile vibrator.

6/7. A body-worn tracking device according to claim 1 wherein the field programmable gate array includes a processor and memory containing a schedule of rules and location constraints.

7/8. A body worn tracking device according to claim 1 wherein the wireless data modem communicates directly to remote associated devices selected from the group consisting of victim devices, central data base, supervisory agency and law enforcement.

8/9. The body-worn device according to claim 1 wherein the sealed enclosed case contains a backup battery to provide power to the circuit board if the main battery is discharged or during replacement.

9/10. The body-worn device according to claim 1 wherein the sealed enclosed case contains a wireless data modem to actively transmit the location of the body-worn device at current health and status frequent intervals.

10/11. The body-worn device according to claim 1 wherein the sealed enclosed case contains a wireless data modem to passively transmit the accumulated location movement history of the body-worn device at predetermined intervals.

Sub 12. A system for determining the spacial coordinates of an offender comprising attaching a tamper resistant body-worn tracking

device to a limb of the offender, and sending signals directly from the body-worn tracking device to remote associated notification devices, the body-worn tracking device providing a sealed case containing:

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Cont.
- (a) a main battery;
 - (b) a signaling device;
 - (c) a circuit board having attached to the board
 - (1) a wireless data modem,
 - (2) a GPS receiver,
 - (3) a matched filtering GPS receiver, and
 - (4) a field programmable gate array.

13. The system according to claim 12 including a central station computer in direct communication with the body-worn device, the computer containing an algorithm for comparing the current location of the body-worn tracking device to a schedule of rules and location restraints to determine if a violation has occurred.

12 14. The system according to claim 11 including direct communication to a victim's body-worn device to determine if a dynamic rule violation has occurred.

13 15. The system according to claim 11 wherein a low profile vibrator is provided as the signaling device.

14 16. The system according to claim 11 wherein the circuit board has additionally attached a battery monitoring circuit.

15 17. The system according to claim 11 wherein the sealed case contains a field programmable gate array comprising multiple integrated circuits for power saving.

^{16/}18. The system according to claim ^{11/}12 wherein the sealed case contains a passive tracking mode for reduced wireless communications and power savings.

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